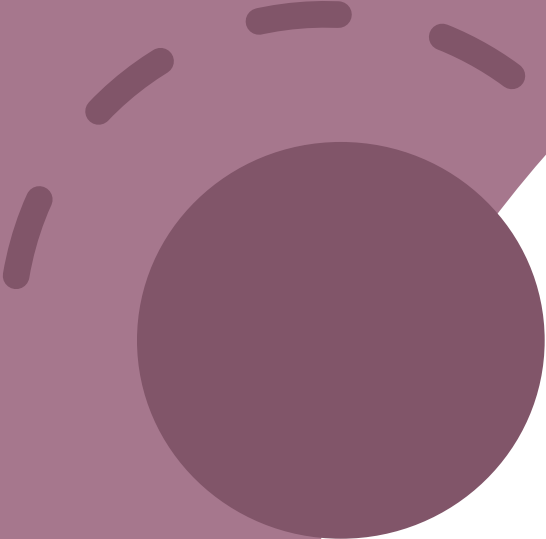




Transgender Healthcare

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Disclosure

Objectives

- Present key terminology and definitions commonly used in transgender health.
- Identify health gaps that impact the health of transgender patients.
- List medications commonly used in gender transition.
- Describe appropriate monitoring parameters for efficacy and safety.
- Discuss HIV prevention strategies for transgender persons
- Describe the pharmacists and the pharmacy technicians' roles related to transgender health.

Key Terminology/ Definitions

- **Cisgender:** Individuals whose current gender identity is the same as the sex they were assigned at birth.
- **Gender Expression:** How an individual chooses to present their gender to others through physical appearance and behaviors, such as style of hair or dress, voice, or movement.
- **Gender Identity:** An individual's sense of their self as man, woman, transgender, or something else.
- **Gender Minority:** Individuals whose gender identity (man, women, other) or expression (masculine, feminine, other) is different from their sex (male, female) assigned at birth.
- **Gender Nonbinary:** Individuals who do not identify their gender as man or woman. Other terms to describe this identity include genderqueer, agender, bigender, gender creative, etc.
- **Gender Nonconforming:** The state of one's physical appearance or behaviors not aligning with societal expectations of their gender (a feminine boy, a masculine girl, etc.).

Source: CDC

<https://www.cdc.gov/healthyyouth/terminology/sexual-and-gender-identity-terms.htm>

Key Terminology/ Definitions

- **Transgender:** Individuals whose current gender identity differs from the sex they were assigned at birth.
- **Transgender man (trans man, trans male, transgender male, female-to-male):** A person who was assigned a female sex at birth whose gender identity is male.
- **Transgender women (trans women, trans female, transgender female, male-to-female):** A person who is assigned male sex a birth whose gender identity is female.
- **Transsexual:** older clinical term which was used to describe individuals who had undergone gender transition through use of hormone, surgical procedures, or both and live as the gender with which they identify rather than the sex assigned at birth. ****do not use this term unless the patient tells you to use it****

Source: CDC

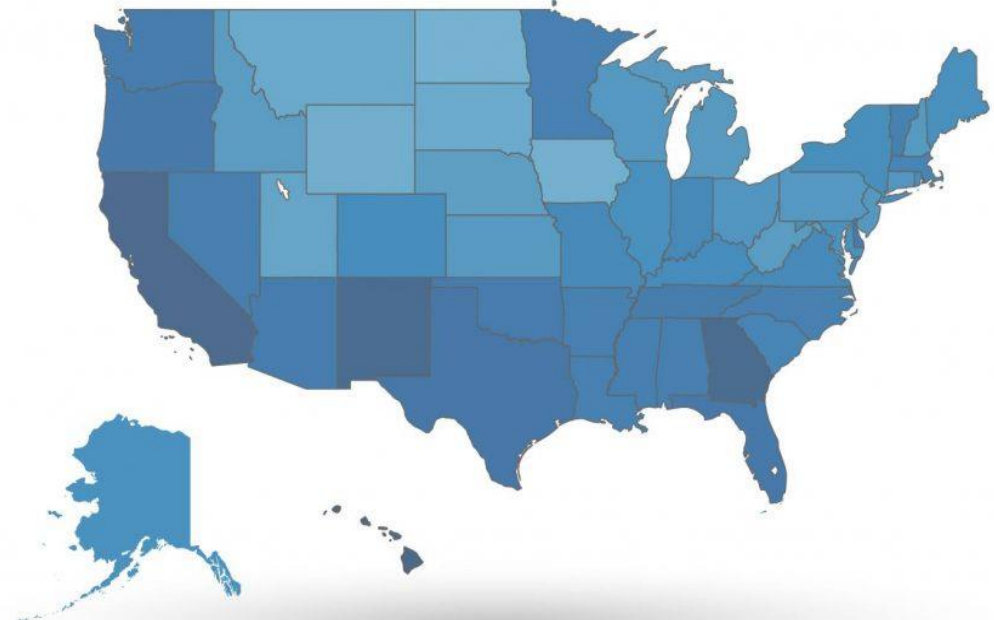
<https://www.cdc.gov/healthyouth/terminology/sexual-and-gender-identity-terms.htm>


Key Terminology/ Definitions

- **Gender-affirming treatment:** Use of medication, surgical procedures, or a combination of both to adapt the body to the experienced gender rather than the sex assigned at birth. Not all transgender people will seek gender-affirming treatment.
- **Gender dysphoria:** discomfort or distress that results from incongruence between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics). The DSM-5 published in 2013 replaced "gender identity disorder" with "gender dysphoria".
- **Sexual Orientation:** Refers to a person's sexual and emotional attraction to another person and the behavior and/or social affiliation that may result from this attraction (lesbian, gay, bisexual, etc.)



1.4 million Adults in the U.S.
Identify as Transgender,
0.6% of the Adult Population



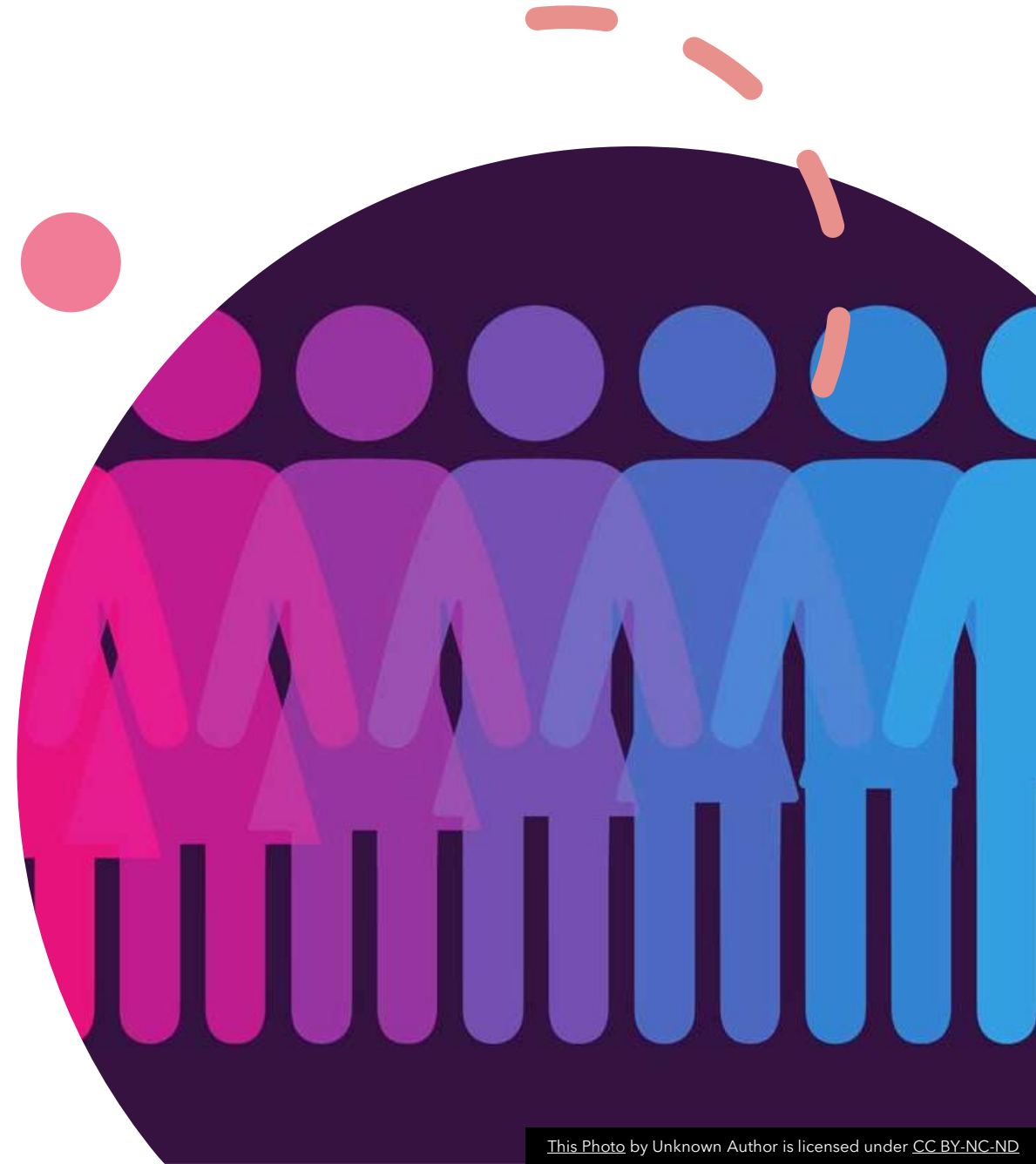
Percent of adults identifying as transgender in the U.S.
0.00%  0.78%

Background

Background

- Transgender people
 - Vulnerable minority group
 - Higher prevalence:
 - Depression
 - Anxiety
 - Somatisation
 - Suicide attempts
 - Smoking
 - Alcohol and drug misuse
 - HIV infection
 - Disproportionate burden
 - Specific barriers to healthcare access

LGBT Demographic Data Interactive. (January 2019).
Los Angeles, CA: The Williams Institute, UCLA School of Law.



Transgender Healthcare



33% of transgender people **delayed seeking preventive health** because of mistreatment in the health care system



Without regular preventive care and treatment transgender people are **at risk** for **advance and costly** diagnoses

Access to Healthcare

- Barriers patient encounters
 - Financial
 - Socioeconomic
 - Health system
 - Discrimination
 - Provider expertise



Treatment

Masculinizing
Therapy

Feminizing
Therapy

Anti-
androgens



Treatment

- Individualized based on:
 - Patient's goals
 - Risk vs benefits of the medications
 - Existent medical conditions
 - Social and economic issues



Masculinizing Therapy: Testosterone

- Contraindications
 - Active hormone sensitive cancers
- Clinical Effects
 - Increased muscle mass and strength
 - Deepening of the voice
 - Facial and body hair growth
 - Atrophy in breast tissue
 - Redistribution of body fat

The Effects Of Testosterone




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Masculinizing Therapy: Testosterone


- Adverse effects
 - Clitoral enlargement
 - Undesired hair growth
 - Male pattern baldness
 - Increases in sweating and odor pattern changes
 - Skin oiliness/acne
 - Vaginal atrophy/drying
 - Erythrocytosis (increases risk of thrombosis)
 - Liver dysfunction
 - Neuropsychiatric conditions*
 - Cardiovascular disease*

REPRODUCTIVE SYSTEMS


Female
Irregular menstrual cycle;
Clitoral hypertrophy;
Uterine and breast atrophy;
cervical and/or
endometrial cancer.



Male
Decreased endogenous
androgens production;
testicular atrophy;
infertility;
prostatic hypertrophy;
prostate cancer.




LIVER




Hepatocellular damage;
cholestasis peliosis;
hepatic adenoma;
hepatocarcinoma;
increased cholesterol;
decreased HDL cholesterol.

CARDIOVASCULAR SYSTEMS




Hypertension thrombosis;
pro atherogenic effects;
left ventricular hypertrophy ;
Sudden Cardiac Death


ENDOCRINE SYSTEMS
Decreased glucose.




ADVERSE AASs EFFECTS



MUSCULOSKELETAL
Early epiphyseal closure in adolescents;
increased rate of muscle strains/ruptures;
increased risk of muskultendinous




NEUROPSYCHIATRIC/BEHAVIORAL INVOLVEMENT




Mood swings;
aggressive behavior;
depression;
psychosis;
addiction withdrawal and
dependency disorders.

URINARY
Creatinine acute renal failure;
focal segmental glomerulosclerosis;
membranoproliferative glomerulonephritis.




INTEGUMENT



Acne, alopecia,
hirsutism,
male pattern baldness,
edema.

LARYNX
Deepening of the voice.



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Masculinizing Therapy: Testosterone

- Available options

Agent	Dosing
Testosterone Cypionate (Depo [®] -Testosterone) 200mg/mL (10 mL vial)	Initial- 100mg every 2 weeks IM or SubQ Max- 200mg every 2 weeks IM or SubQ *may use weekly dosing at half dose **May initiate at 20mg/week for non-binary or genderqueer patients not requiring full hormonal transition**
Testosterone Ethionate (Delestryl IM injection	Initial- 100mg every 2 weeks IM or SQ Max- 200mg/2 weeks IM or SQ *may use weekly dosing at half dose **May initiate at 20mg/week for non-binary or genderqueer patients not requiring full hormonal transition**

Masculinizing Therapy: Testosterone

- Available options

Agent	Dosing
Testosterone 1% topical gel (Androgel, Testim, Vogelxo)	Initial- 50mg applied every morning Maximum- 100mg applied every morning Pump delivers 12.5mg testosterone/actuation Packets come in 25mg and 50mg doses
Testosterone 1.62% topical gel (Androgel)	Initial- 40.5mg - 60.75mg every morning Maximum- 103.25mg every morning Pump delivers 20.25mg testosterone/actuation
Testosterone 2% axillary solution (Axiron)	Initial- 60mg every morning Maximum- 90mg-120mg every morning Pump delivers 30mg testosterone/actuation
Compounded Testosterone Cream	Initial- 50mg every morning Maximum- 100mg every morning

Masculinizing Effect of Treatment in Transgender Male

Effect	Onset	Maximum
Skin oiliness/acne	1-6 mo	1 -2y
Facial/body hair growth	6-12 mo	4-5y
Scalp hair loss	6-12 mo	-----
Increased muscle mass/strength	6-12 mo	2-5y
Fat redistribution	1-6 mo	2-5y
Cessation of menses	1-6 mo	-----
Clitoral enlargement	1-6 mo	1-2y
Vaginal atrophy	1-6 mo	1-2y
Deepening of voice	6-12mo	1-2y

Adapted from Guidelines on Gender-Dysphoric/Gender-Incongruent Persons.

Monitoring

- Every 3 months for the first year, then annually
- Labs that should be checked:
 - Total testosterone
 - Sex hormone binding globulin (SHBG)
 - Albumin
 - Hemoglobin
 - Hematocrit
- Other labs:
 - Lipid panel
 - A1c
 - Estradiol
- Monitor weight and blood pressure
- Osteoporosis screening*



Feminizing Therapy: Estrogen

- Estradiol (17- β)
 - Most commonly used in feminizing therapy
- Contraindications:
 - **Estrogen-sensitive cancer**
 - Thromboembolic disorders*
 - Thrombogenic mutations*
 - Migraine headaches with aura**
- Clinical effects:
 - Breast development
 - Fat redistribution
 - Decreased body hair
 - Decreased muscle mass
 - Reduced testicular size



Feminizing Therapy: Estrogen

Adverse effects

- Migraines
- Mood swings
- Hot flashes
- Weight gain
- Venous thromboembolism
- Increased CV risk
- Increased TG
- Hepatotoxicity
- Gall stones
- Prolactinoma
- Galactorrhea
- Impaired fertility
- Decreased libido
- Decreased erections
- Sexual dysfunction
- Possible cancer risk

Feminizing Therapy: Estrogen

- Available options

Agent	Dosing
Estradiol	Oral/Sublingual: 2-4 mg /day
Estradiol patch	Transdermal: 0.01-0.4 mg/day
Estradiol valerate	IM: 5-30 mg every 2 weeks or 2-10 mg every week
Estradiol Cypionate	IM: 2-5 mg every 2 weeks

Feminizing Therapy: Progestin

- Clinical effects:
 - May increase breast growth
- Adverse effects:
 - May increase CV risk
 - Weight gain
 - Depression
 - Possible decrease in bone mineral density
- Available options:

Agent	Dosing
Medroxyprogesterone acetate	Oral: 5-10 mg at bedtime
Mircronized progesterone	Oral: 100-200 mg at bedtime

Feminizing Effect of Treatment in Transgender Females

Effect	Onset	Maximum
Redistribution of body fat	3-6 mo	2-3y
Decrease in muscle mass and strength	3-6mo	1-2y
Softening of skin/decreased oiliness	3-6mo	unkown
Decreased sexual desire	1-3mo	3-6mo
Decreased spontaneous erections	1-3 mo	3-6mo
Male sexual dysfunction	Variable	Variable
Breast growth	3-6 mo	2-3y
Decreased testicular volume	3-6 mo	2-3y
Decreased sperm production	Unknown	>3y
Decreased terminal hair growth	6-12mo	>3y
Scalp hair	Variable	-----
Voice changes	None	-----

Adapted from Guidelines on Gender-Dysphoric/Gender-Incongruent Persons.

Anti-androgens

Mineralocorticoid receptor antagonist

- Spironolactone

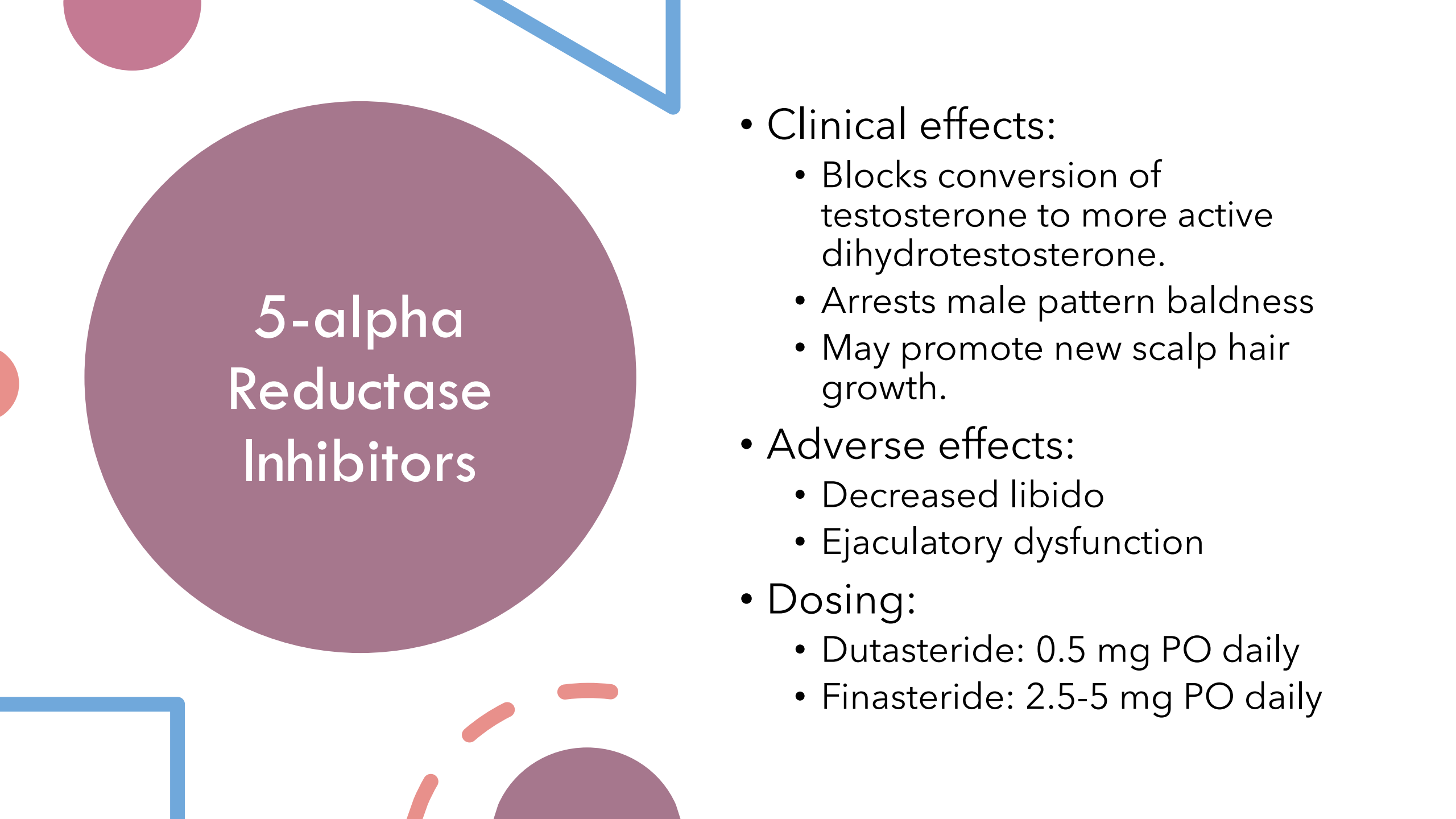
5-alpha reductase inhibitors

- Finasteride
- Dutasteride



Spironolactone

- Clinical effects:
 - Suppresses testosterone synthesis
 - May increase breast growth
 - May arrest male pattern baldness
- Adverse effects:
 - May worsen renal insufficiency
 - Hyperkalemia
 - Hypotension
 - Headache
 - Nausea
 - Impotence
 - Gynecomastia (may be clinically useful in feminizing therapy)
- Dosing: 50-200 mg PO BID



5-alpha Reductase Inhibitors

- Clinical effects:
 - Blocks conversion of testosterone to more active dihydrotestosterone.
 - Arrests male pattern baldness
 - May promote new scalp hair growth.
- Adverse effects:
 - Decreased libido
 - Ejaculatory dysfunction
- Dosing:
 - Dutasteride: 0.5 mg PO daily
 - Finasteride: 2.5-5 mg PO daily

Monitoring

- Every 3 months for the first year, then annually
- Labs that should be checked:
 - Serum testosterone
 - Serum estradiol
 - Sex hormone binding globulin (SHBG)
 - BUN/Cr/K+ (only if spironolactone used)
- Other labs:
 - Lipid panel
 - A1c
 - Albumin
- Cancer screening
- Osteoporosis screening*



HIV Prevention Strategies



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HIV Prevention Strategies

- From 2009-2014
 - HIV diagnosis in United States



2,351

84% transgender women

15% transgender men

<1% other gender identity

- A 2019 systematic review and meta-analysis found that
 - About 14% of transgender women have HIV



Source: CDC

<https://www.cdc.gov/hiv/group/gender/transgende>

HIV Diagnoses Among Transgender People in the United States by Race/Ethnicity, 2009-2014

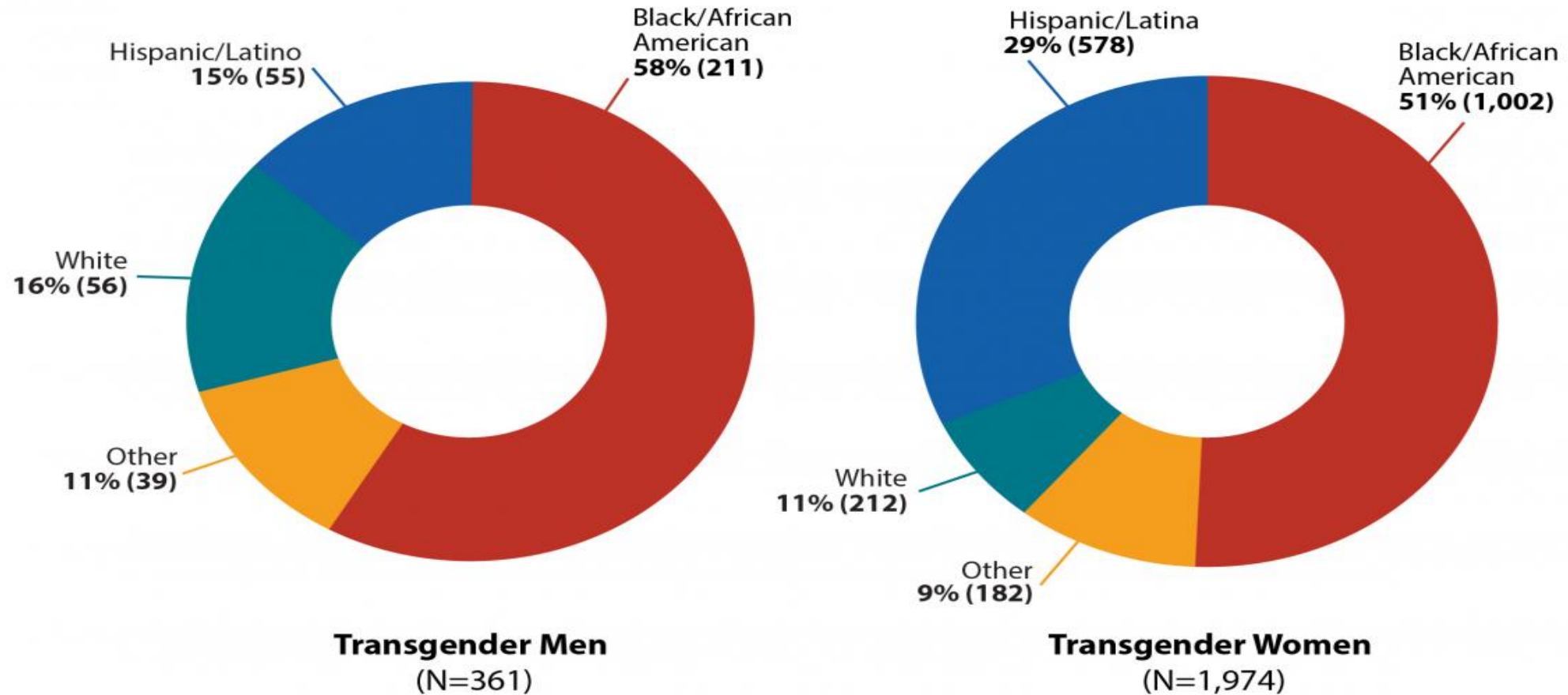
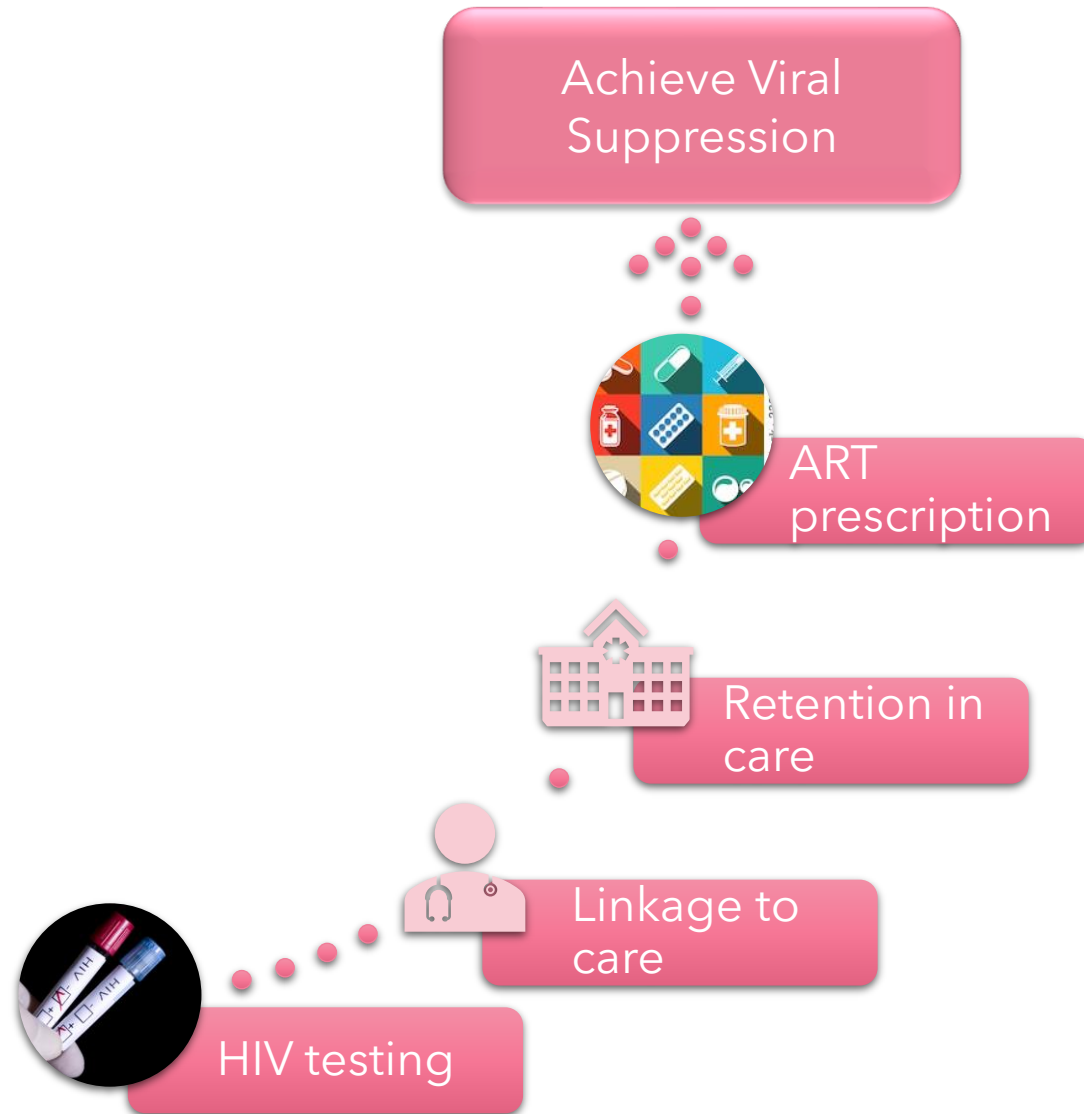


Image: <https://www.cdc.gov/hiv/group/gender/transgender/>

Source: Clark H, Babu AS, Wiewel EW, Opoku J, Crepaz N. [Diagnosed HIV Infection in Transgender Adults and Adolescents: Results from the National HIV Surveillance System, 2009-2014](#) [external icon](#). *AIDS Behav* 2017;21(9):2774-2783. Hispanics/Latinos can be of any race

HIV Continuum of Care



Top 5 Health Concerns among Transgender people living with HIV

Gender affirming & non-discriminatory health care

Hormone therapy and side effects

Mental health care, including trauma recovery

Personal care, including nutrition, healthy living etc..

Antiretroviral therapy and side effects

Prevention challenges



Certain behaviors and socioeconomic factors



HIV behavioral interventions



Stigma, discrimination, social rejection and exclusion



Lack of HIV testing measures

Prevention challenges



Lack of studies about sexual health

Knowledge
+ Action
= Power

Lack of knowledge about transgender health issues



Lack of engagement in medical care



Limited transgender specific data

How can health care providers address HIV prevention?

HIV
screening

Test and
treat STD

Counsel
about risk
reduction

PrEP and
PEP

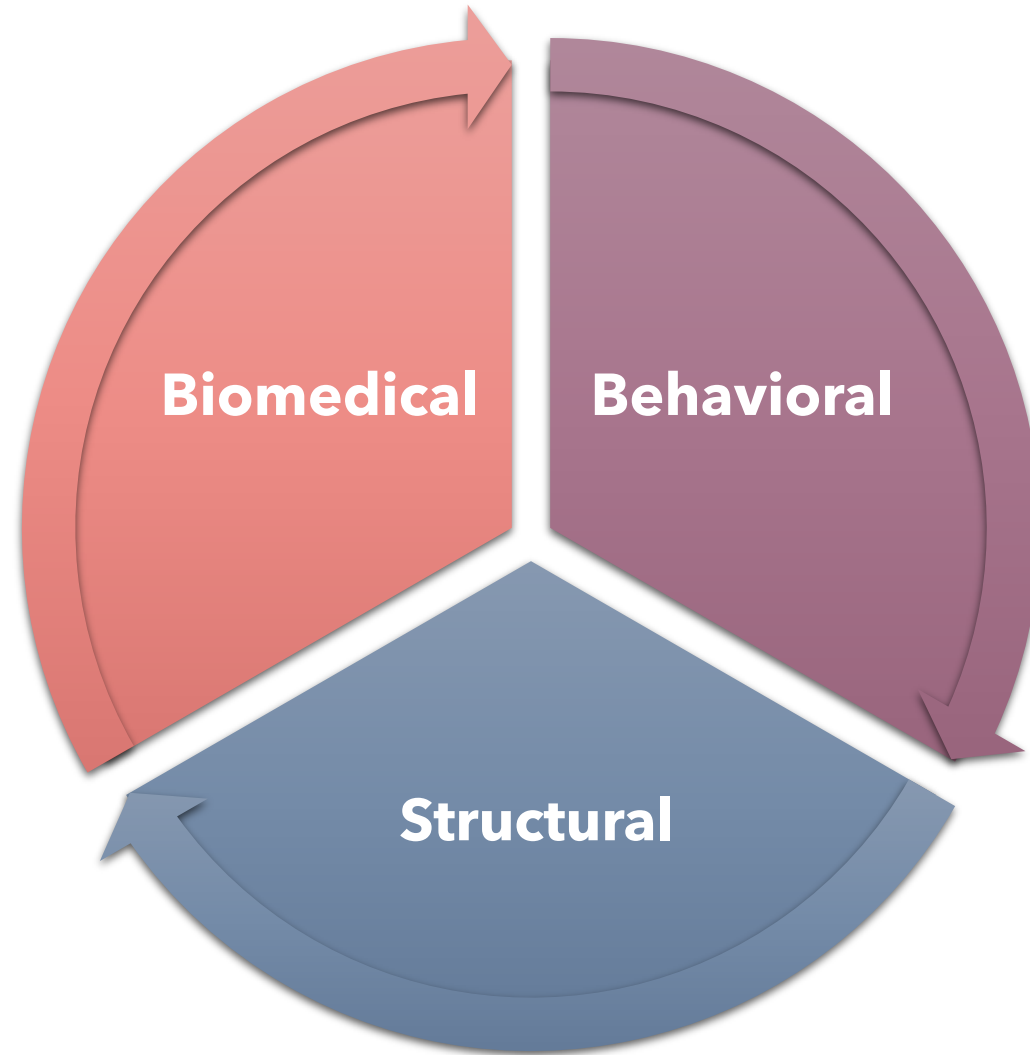
Promote
engagement
in care

HIV Prevention Strategies

- Helpful tips when discussing sexual health
 - **Explain** why sexual history is important
 - **Assure** confidentiality
 - **Avoid** assumptions about sexual orientation
 - **Avoid** assumptions of partner's gender identity
 - **Avoid** assumptions about sexual activities
 - **Assess** HIV risk based on sexual history not gender identity
 - **Ask** about sexual function and satisfaction



HIV Prevention Strategies

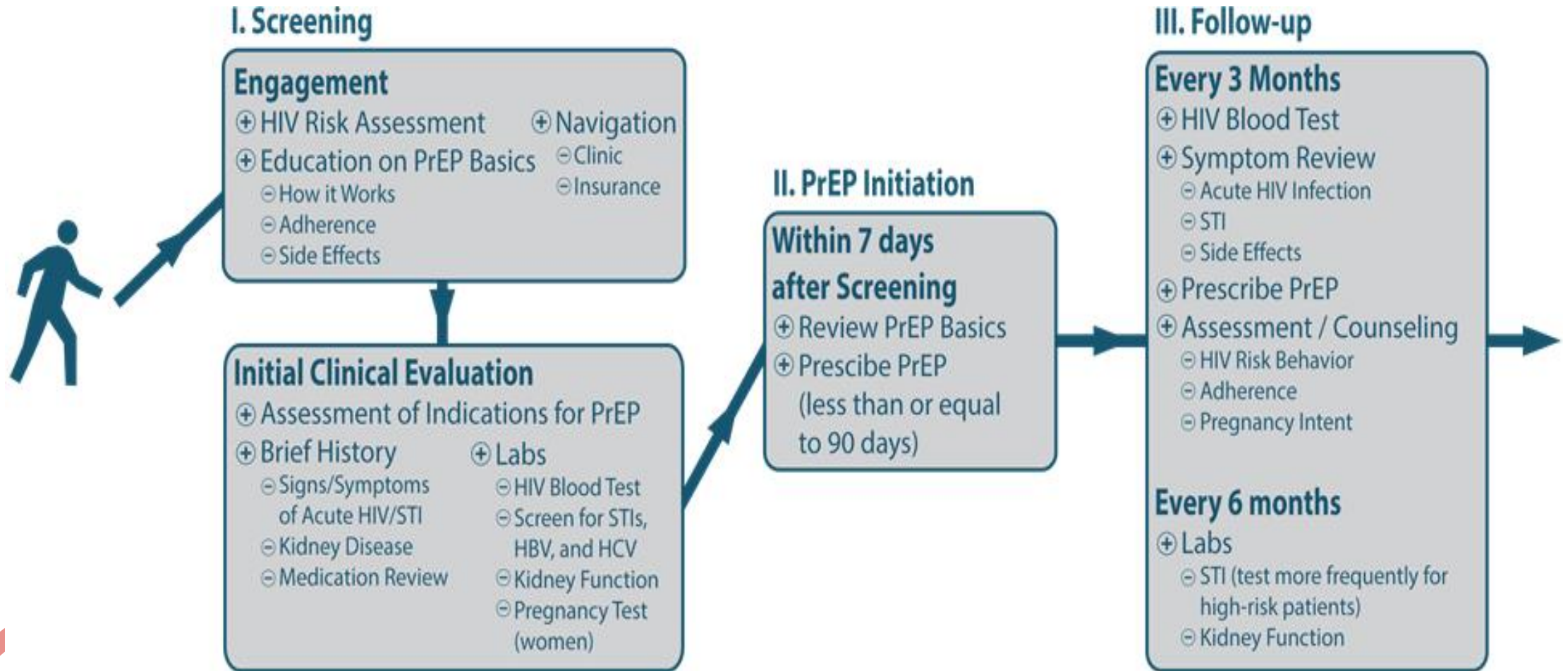


HIV Prevention Strategies: Biomedical

- PrEP
 - Tenofovir disoproxil fumarate/emtricitabine (Truvada®)
 - Approved in 2012 for PrEP
 - Recommended by the guidelines
 - Tenofovir alafenamide/emtricitabine (Descovy®)
 - Approved in 2019 for PrEP
 - No recommendations made yet in the guidelines
- Effectiveness depends on:
 - Daily use
 - Adherence
- Limited studies regarding PrEP in transgender people



HIV PrEP Care



Role of the Pharmacy Care Team



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